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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,770	08/07/2001	Avner Pierre Badehi	42043	2264

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WASHINGTON,, DC 20036

EXAMINER

BEREZNY, NEMA O

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,770

Applicant(s)

BADEHI, AVNER PIERRE

Examiner

Nema O Berezny

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20,22-24,26-29,33,34,36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20,22-24,26-29,33,34,36 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☒ Certified copies of the priority documents have been received in Application No. 09/725,166.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

Cancellation of claim 37 in paper filed 3-29-04 is acknowledged.

Claim Rejections - 35 USC § 112

The rejection of claims 20, 27-29, and 34 under 35 USC 112 second paragraph, made in prior Office Action is hereby withdrawn, subsequent to corrections made by Applicant in paper filed 3-29-04.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 23, 26-28, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Martin (5,610,431). Martin discloses a method of producing a crystalline substrate based device comprising: providing a wafer (Figs.6,9 el.40) comprising a semiconductor microstructure (el.34) including a semiconductor substrate (col.6 lines 55-59; col.10 line 49-56); providing a spacer (el.14,16,18) at a wafer level, said spacer defining at least one cavity (el.38) extending entirely therethrough; adhesively sealing to said wafer at least one transparent packaging layer (el.20) and said spacer onto said

Art Unit: 2813

semiconductor substrate over said microstructure and at least partially spaced therefrom, thereby to define at least one gap at said at least one cavity between said microstructure and said at least one packaging layer (Fig.6; col.6 lines 41-52); forming a multiplicity of electrical contacts (el.66) along surfaces of said at least one packaging layer which define edges of individual packaged devices (col.8 lines 23-27; Fig.9); and subsequently dicing said wafer into said individual packaged devices (implied in col.10 lines 49-56), wherein said spacer is formed as a piece separate from said substrate (Figs.5,6) **[claim 20]**. Martin also discloses wherein said crystalline substrate comprises silicon (col.6 lines 55-59) **[claim 23]**; wherein said at least one cavity comprises a plurality of cavities (implied with wafer level processing – col.10 lines 49-56) **[claim 26]**; wherein said microstructure comprises a micromechanical structure (col.6 lines 41-44) **[claim 27]**; wherein said microstructure comprises a microelectronic structure (col.6 lines 55-59) **[claim 28]**; and wherein said spacer is formed as a piece separate from said at least one packaging layer (Figs.2-3) **[claim 38]**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin as applied to claim 20 above, and further in view of Salatino et al.

Art Unit: 2813

(5,915,168). Martin does not disclose adhesively sealing said packaging layer with epoxy, or providing a surface acoustic wave structure. However, Salatino discloses sealing a cover structure to a substrate using epoxy (col.5 lines 13-19). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the epoxy of Salatino with the method of Martin, wherein epoxy provides a good moisture impermeable seal **[claim 22]**.

Salatino also discloses providing a surface acoustic wave device (col.5 lines 27-32). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the surface acoustic wave device of Salatino with the method of Martin, wherein a covered package with a gap between the microstructure and the cover is required for a surface acoustic wave structure **[claim 34]**.

Claims 24, 33, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin as applied to claim 20 above, and further in view of Ichikawa et al. (5,996,199). Martin does not disclose providing a substrate made of lithium niobate, lithium tantalate, or quartz. However, Ichikawa discloses forming a microstructure on a quartz **[claim 36]**, lithium niobate **[claim 24]**, and lithium tantalate **[claim 33]** substrate (col.2 lines 51-54). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the substrates of Ichikawa with the method of forming a crystalline substrate based device of Martin in order to absorb light of a particular frequency used in surface acoustic wave (SAW) devices (Ichikawa – col.15 lines 29-36).

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martin as applied to claim 20 above, and further in view of Malinovich et al. (6,168,965). Martin does not disclose an optoelectronic microstructure. However, Malinovich discloses wherein said microstructure comprises an optoelectronic structure (col.1 lines 5-8). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the optoelectronic structure of Malinovich with the method of Martin, wherein an optoelectronic structure requires a transparent cover such as that disclosed by Martin.

Response to Arguments

Applicant's arguments with respect to claims 20, 22-24, 26-29, 33-34, and 36-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 2813

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (571) 272-1686. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB


ERIK J. KIELIN
PRIMARY EXAMINER